SALUTOGENIC APPROACH OF YOGA THERAPY FOR INDIVIDUALS OF VARIABLE DEHA PRAKRITI HAVING NON-SPECIFIC CHRONIC LOW BACK PAIN (NCLBP)

SYNOPSIS

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by

Mr. NILACHAL

(UIN: 2105003003)

Ph.D. Program (Fulltime) in Yoga Therapy

Under the guidance of

Dr. ANANDA BALAYOGI BHAVANANI

(Director, Institute of Salutogenesis & Complementary Medicine, Sri Balaji Vidyapeeth)

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ABSTRACT

Background

Non-specific chronic low back pain (NCLBP) is a leading cause of disability worldwide, characterized by complex interactions between biomechanical, neurophysiological, and psychosocial factors. Conventional management strategies often provide limited long-term benefit. Yoga Therapy, as a multidimensional mind–body intervention, and Ayurveda, through its concept of Deha Prakriti, offer a potential framework for personalized and salutogenic rehabilitation.

Aim

To evaluate the effects of a Generic Yoga Therapy protocol in individuals with NCLBP and to investigate the influence of Deha Prakriti on therapeutic response.

Methods

A randomized controlled trial was conducted with 88 participants diagnosed with NCLBP. Participants were allocated to either Adjuvant Yoga Therapy (AYT) combined with Conservative Management (CM) or CM alone. The intervention was administered over 12 weeks. Outcome measures included pain intensity (VAS), functional disability (ODI), perceived stress (PSS), pain catastrophizing (PCS), and Sense of Coherence (SoC-13). Deha Prakriti was assessed using AyuSoft software. Data were analyzed using repeated-measures ANOVA and Prakriti-based subgroup analysis.

Results

AYT demonstrated significantly greater improvement compared to CM in pain (VAS), disability (ODI), perceived stress (PSS), and sense of coherence (SoC) ($p < 0.001$). Significant interaction effects indicated that improvements were attributable to the intervention rather than time alone. Pain catastrophizing (PCS) improved in both groups without significant between-group difference.

Prakriti-based analysis revealed heterogeneity in response. Kapha-dominant subtypes (KPPA, VPKA) showed consistent multidimensional improvement across clinical and psychological domains. Pitta-dominant subtypes (PPKA, PPVA) demonstrated selective improvement, primarily in pain and stress. Vata-associated subtypes (KPVA, VPPA) exhibited restricted responsiveness, largely confined to stress reduction. Significant interaction effects confirmed that therapeutic response to AYT was Prakriti-dependent.

Conclusion

Adjuvant Yoga Therapy is an effective multidimensional intervention for NCLBP, producing significant improvements in pain, function, stress, and adaptive capacity. The findings demonstrate that therapeutic response is constitution-dependent, supporting the feasibility of Prakriti-guided personalization in Yoga Therapy. This study advances an integrative, salutogenic model of care by bridging traditional Ayurvedic principles with contemporary clinical research.

Keywords:

Pain, Non-specific chronic low back pain, Yoga Therapy, Prakriti, Ayurveda, Salutogenesis

1. INTRODUCTION

1.1 Background

Non-specific Chronic Low Back Pain (NCLBP) is a prevalent musculoskeletal disorder characterized by persistent low back pain lasting longer than 12 weeks without a clearly identifiable anatomical or pathological cause.[1] It represents a significant global public health challenge and has consistently ranked as the leading cause of years lived with disability worldwide since 1990.[2,3] NCLBP affects nearly 50-80% of adults at some point during their lifetime and accounts for approximately 90% of all chronic low back pain cases.[4] Although not life-threatening, NCLBP imposes a substantial burden by impairing physical function, emotional well-being, quality of life, and work productivity. [5,6]

In India, the prevalence of chronic low back pain is estimated to be around 19.6% among adults aged 20–59 years, with a higher burden observed among women between 30 and 60 years of age.[4] The rising prevalence of sedentary lifestyles, occupational strain, psychosocial stress, and physical inactivity has contributed to the increasing incidence of NCLBP. Conventional management strategies primarily focus on pharmacological and physical modalities aimed at symptom reduction; however, these approaches often fail to address the complex biopsychosocial contributors underlying pain chronicity, resulting in recurrence and limited long-term effectiveness.[7,8] Therefore, there is an urgent need for comprehensive and integrative approaches that address physical, psychological, and social dimensions of NCLBP.

1.2 Pathophysiology of Non-Specific Chronic Low Back Pain

NCLBP is increasingly understood as a multifactorial condition involving interactions between biomechanical dysfunction, neuromuscular imbalance, altered motor control, and central sensitization. Structural abnormalities alone do not adequately explain pain persistence in NCLBP. Studies have reported asymmetrical muscle activation, muscle atrophy, reduced muscle thickness, and impaired stabilization of deep trunk muscles, including the multifidus and transversus abdominis.[7,9-10] Additionally, compromised diaphragmatic function and altered breathing patterns further contribute to postural instability and pain.

Beyond physical dysfunction, NCLBP is associated with significant neurophysiological and psychological alterations. Persistent nociceptive input may lead to central sensitization, altered pain processing, and heightened pain perception. Psychological factors such as stress, fear-avoidance behavior (kinesiophobia), pain catastrophizing, anxiety, and depression play a crucial role in perpetuating pain and disability.[11,12] These interconnected physical and psychological mechanisms firmly establish NCLBP as a biopsychosocial disorder, necessitating therapeutic strategies that extend beyond symptom suppression to address underlying functional and adaptive processes.

1.3 Need for integration of Traditional systems of medicine

The complex and chronic nature of NCLBP highlights the limitations of purely biomedical, symptom-focused treatment models.[13] Traditional systems of medicine emphasize holistic care by addressing the interrelationship between body, mind, and lifestyle factors, thereby supporting overall health, resilience, and quality of life. [14,15] Integrating traditional medical systems into contemporary healthcare frameworks can enhance patient-centered care by incorporating preventive, promotive, and rehabilitative strategies.[16,17]

In the Indian context, the integration of AYUSH systems including Ayurveda and Yoga has gained recognition as a valuable approach for managing chronic non-communicable and musculoskeletal conditions. These systems emphasize individualized care, self-regulation, and long-term health maintenance, which are particularly relevant in chronic pain conditions such as NCLBP.[18]

1.4 Potential of Yoga and Ayurveda in Non-Specific Chronic Low Back Pain

Yoga and Ayurveda are complementary traditional systems that adopt a holistic approach to health and disease, emphasizing the individual rather than the condition in isolation.[18-20] Yoga Therapy has been increasingly recognized as a holistic intervention in the management of non-specific chronic low back pain, addressing physical, psychological, and behavioral dimensions of health.[22,23] It also supports greater body awareness and more adaptive responses to pain, contributing to overall functional improvement.[21-25]

Ayurveda complements Yoga through its constitutional framework based on Deha Prakriti, which recognizes individual variability in physiological and psychological responses to disease and treatment.[3] Pain disorders are traditionally understood in relation to Vata

predominance, and management strategies are directed toward restoring doshic balance through individualized lifestyle, behavioral, and therapeutic interventions.[18-20]

The integration of Yoga and Ayurveda provides a coherent framework for personalized care, aligning with the Salutogenic perspective of health by emphasizing adaptability, resilience, and self-regulation. This integrative approach holds particular relevance in chronic conditions such as non-specific low back pain, where variability in presentation and treatment response necessitates individualized therapeutic strategies.[25-26]

1.5 Purpose of the study

Despite increasing evidence supporting the effectiveness of yoga therapy in the management of NCLBP, most existing studies employ standardized interventions without accounting for individual constitutional variability. There is a paucity of research examining the influence of Ayurvedic Prakriti on therapeutic response to yoga interventions in chronic low back pain. Moreover, the application of a Salutogenic framework in evaluating integrative yoga-based interventions remains limited.[15,16]

Therefore, the present study aims to investigate the effects of a Generic Yoga Therapy protocol on Non-Specific Chronic Low Back Pain while exploring the moderating role of Deha Prakriti. By integrating Yoga Therapy, Ayurvedic constitutional assessment, and salutogenic outcomes, this study seeks to contribute scientific evidence toward personalized, integrative approaches in the management of NCLBP and to support the broader integration of AYUSH systems within contemporary pain rehabilitation.

2. Aims & Objectives

2.1 Aim

To Study the Effects of Yoga Therapy (YT) on Non-specific Chronic Low Back Pain (NCLBP) investigating the influence of individual prakriti of the patient.

2.2 Objectives

1. To investigate the effect of Yoga Therapy in Back pain
2. To investigate the role of Prakriti on back pain with the help of **AyuSoft** prakriti analysis software.
3. To investigate the influence of Prakriti on Generic Yoga Therapy Protocol in Back Pain

3. Research Question

- Does a Generic Yoga Therapy protocol modify Non-specific Chronic Low Back Pain?
- Does the individual prakriti influence response to Generic Yoga Therapy protocol in NCLBP?

4. Brief Review of Literature

4.1 . Non-specific Chronic Low Back Pain: Burden and Clinical Complexity

Non-specific chronic low back pain (NCLBP) is one of the most prevalent musculoskeletal disorders worldwide and the leading contributor to years lived with disability.[1,2] It is termed "non-specific" because no definitive structural pathology such as fracture, infection, malignancy, or nerve root compression can be identified in the majority of cases.[1] Despite advances in imaging and biomedical diagnostics, nearly 85-90% of chronic low back pain cases remain etiologically unclear, highlighting its multifactorial nature.[3]

Contemporary pain science conceptualizes NCLBP as a biopsychosocial condition, involving interactions between mechanical dysfunction, neuromuscular imbalance, central sensitization, psychological distress, maladaptive pain cognition, and lifestyle factors.[7,8] Conventional management strategies primarily pharmacotherapy, physiotherapy, and surgical interventions in selected cases often provide only short-term symptomatic relief and are associated with high recurrence rates, adverse effects, and escalating healthcare costs.[7,8] These limitations have prompted increasing interest in complementary and integrative approaches that address both physical and psychological dimensions of chronic pain.[13]

4.2 Yoga Therapy as a Mind-Body Intervention for Chronic Low Back Pain

Yoga offers a multidimensional mind-body discipline that includes mindful living, āsana (physical postures), prāṇāyāma (pranic regulation through breath), dhyāna (meditatiion), and niṣpanda (relaxation) techniques.[21-25] When applied therapeutically, these components function as an integrated intervention addressing both physical and psychophysiological dimensions of chronic low back pain.

SN	Domain	Components / Processes	Therapeutic Effects in NCLBP
1	Mind–Body Framework	Mindful living, āsana (postures), prāṇāyāma (breath regulation), dhyāna (meditation), niṣpanda (relaxation)[21-24]	Integrated intervention addressing both physical and psychophysiological dimensions of chronic low back pain
2	Biomechanical	Physical postures and movement practices [12]	Improved spinal mobility, enhanced core muscle strength, improved postural alignment, reduced mechanical strain and functional limitation[21–25]
3	Neurophysiological	Breath regulation and relaxation practices[7,27]	Autonomic regulation, increased parasympathetic activity, modulation of hypothalamic–pituitary–adrenal (HPA) axis, improved pain modulation
4	Psychological	Meditation, awareness, and mindfulness practices[27]	Reduced perceived stress, decreased fear-avoidance behavior, reduction in catastrophizing, improved adaptive coping and psychological well-being
5	Clinical Implication	Integrated multidimensional effect [27]	Overall improvement in pain, function, and psychological health; variability in response indicates need for individualized approaches in Yoga-based rehabilitation

4.3 Evidence from Different Yoga Therapy Styles

Studies evaluating various yoga styles demonstrate beneficial but heterogeneous outcomes in NCLBP. General Hatha Yoga interventions show moderate improvements in pain, flexibility, and functional capacity, often comparable to conventional therapeutic exercise programs.[21-23] Iyengar Yoga, emphasizing precise alignment and use of props, is among the most extensively studied styles and has demonstrated clinically significant reductions in

pain intensity, functional disability, psychological distress, and medication usage, with some studies reporting sustained long-term benefits.[22-24]

Viniyoga, characterized by individualized, breath-coordinated movement, has shown modest improvements in pain and disability, comparable to stretching and self-care interventions, though inconsistencies in protocol standardization limit generalizability.[23] Integrated Approach to Yoga Therapy (IAYT) programs, combining āsana, prāṇāyāma, relaxation, meditation, and lifestyle counseling, have reported significant improvements in pain, spinal flexibility, functional disability, and psychological well-being, particularly in short-term intensive interventions.[24,25] However, feasibility and sustainability in routine clinical practice remain challenges.

Non-specified or "medical yoga" protocols adapted for specific populations also demonstrate meaningful improvements in pain, function, and psychological well-being. Nevertheless, lack of standardization and detailed reporting limits reproducibility and mechanistic interpretation; however, while core standards should be maintained, yoga interventions must retain flexibility for individualization.[21-24]

4.4 Ayurveda, Prakriti, and Individual Variability in Therapeutic Response

Ayurveda conceptualizes health and disease through the framework of Prakriti, representing an individual's innate constitutional makeup determined by the dominance of Vata, Pitta, and Kapha doshas.[17-18] Prakriti is believed to influence disease susceptibility, symptom expression, progression, and therapeutic responsiveness. Vata predominance is considered to play a central role in the pathophysiology of musculoskeletal pain, contributing to variability in symptom expression, heightened sensitivity, and chronicity.[18-19]

Recent studies employing standardized tools such as AyuSoft for Prakriti assessment demonstrate acceptable concordance with clinician-based evaluation, supporting feasibility for research applications.[18] However, empirical studies examining how Prakriti modulates response to structured yoga therapy interventions in NCLBP are limited, representing a significant gap in integrative pain research.[25-26]

4.5 Research Gaps and Rationale

Despite growing evidence supporting yoga therapy in NCLBP, several gaps persist. Most studies employ standardized, non-individualized yoga protocols without accounting for constitutional variability. Psychological and salutogenic dimensions such as perceived

stress, pain catastrophizing, resilience, and sense of coherence are inconsistently evaluated.[12,15,16] Furthermore, few trials systematically explore whether individual factors such as Prakriti moderate therapeutic outcomes.[26,27]

Given the multifactorial nature of NCLBP and the individualized principles inherent in both Yoga Therapy and Ayurveda, evaluating yoga therapy outcomes through a constitutional and Salutogenic lens is conceptually and clinically relevant. The present study seeks to address these gaps by examining the Salutogenic effects of a Generic Yoga Therapy protocol on clinical and psychological outcomes in NCLBP, with specific emphasis on Prakriti-based differential responsiveness. [15-17,25,26]

5. Methodology

5.1 Consort chart

The flow of participants through the study is presented in the CONSORT diagram (Figure 1). A total of **117 patients were assessed for eligibility**, of whom **29 were excluded** due to not meeting the inclusion criteria (n = 14), declining to participate (n = 9), or having medical contraindications or comorbidities (n = 6). The remaining **88 eligible participants were enrolled and randomized** into two study groups.

Following randomization, **44 participants were allocated to the Adjuvant Yoga Therapy (AYT) group** and **44 participants to the Conservative Management (CM) group**. All participants in both groups completed baseline assessments and received their allocated interventions. During the follow-up period, **7 participants in the AYT group** and **6 participants in the CM group** were lost to follow-up due to **work-related commitments, travel or relocation, and personal or family-related reasons**, which were **unrelated to the intervention**.

Finally, data from **37 participants in the AYT group** and **38 participants in the CM group** were included in the final analysis. **No adverse events or intervention-related complications were reported in either group throughout the study period.**

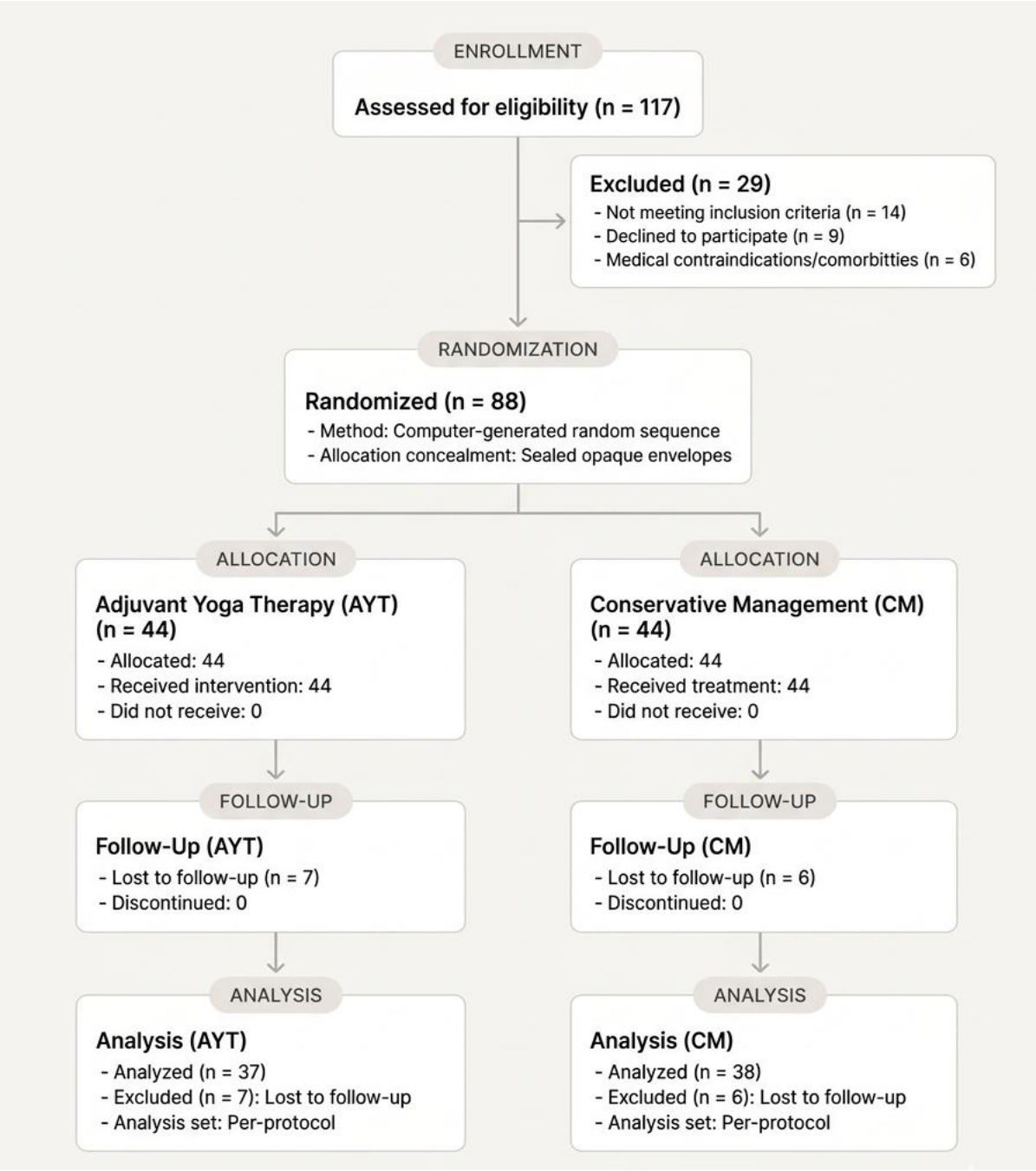

ENROLLMENT
Assessed for eligibility (n = 117)
Excluded (n = 29)
- Not meeting inclusion criteria (n = 14)
- Declined to participate (n = 9)
- Medical contraindications/comorbitties (n = 6)
RANDOMIZATION
Randomized (n = 88)
- Method: Computer-generated random sequence
- Allocation concealment: Sealed opaque envelopes
ALLOCATION
Adjuvant Yoga Therapy (AYT) (n = 44)
- Allocated: 44
- Received intervention: 44
- Did not receive: 0
ALLOCATION
Conservative Management (CM) (n = 44)
- Allocated: 44
- Received treatment: 44
- Did not receive: 0
FOLLOW-UP
Follow-Up (AYT)
- Lost to follow-up (n = 7)
- Discontinued: 0
FOLLOW-UP
Follow-Up (CM)
- Lost to follow-up (n = 6)
- Discontinued: 0
ANALYSIS
Analysis (AYT)
- Analyzed (n = 37)
- Excluded (n = 7): Lost to follow-up
- Analysis set: Per-protocol
ANALYSIS
Analysis (CM)
- Analyzed (n = 38)
- Excluded (n = 6): Lost to follow-up
- Analysis set: Per-protocol

Figure 1: CONSORT flow diagram of study recruitment of subjects with NCLBP

5.2 Study Design

The present study adopted a true experimental design with a two-group pre-post test randomized controlled trial framework. Eligible participants were randomly assigned to either an experimental group receiving Adjuvant Yoga Therapy (AYT) along with Conservative Management (CM) or a control group receiving Conservative Management alone. The study was conducted after obtaining approval from the Institutional Human Ethics Committee (IHEC) of Sri Balaji Vidyapeeth and was carried out in accordance with ethical guidelines for biomedical research involving human participants.

5.3 Place of Study

The study was conducted at the following centers:

- Institute of Salutogenesis and Complementary Medicine (ISCM), Sri Balaji Vidyapeeth, Puducherry
- Department of Orthopedics, Mahatma Gandhi Medical College & Research Institute (MGMC&RI), Puducherry

5.4 Patient Selection

5.4.1 Study Population

The study population comprised patients diagnosed with Non-specific Chronic Low Back Pain (NCLBP) attending the Orthopaedics Outpatient Department of MGMC&RI, Puducherry, who satisfied the inclusion and exclusion criteria.

5.4.2 Inclusion Criteria

- Adults aged **18 to 65 years**
- Diagnosed with **Non-Specific Chronic Low Back Pain** of duration ≥ 12 weeks
- Pain intensity ≥ 4 on the Numeric Rating Scale (NRS)
- Patients receiving conservative medical management
- Ability to perform yoga practices included in the protocol
- Willingness to participate and provide written informed consent
- Participants of both genders

5.4.3 Exclusion Criteria

- Structural spinal pathology (fracture, infection, malignancy)
- Spinal stenosis or inflammatory spinal disorders
- History of spinal surgery
- Neurological deficits or radiculopathy
- Severe psychiatric illness or cognitive impairment
- Pregnancy
- Inability to attend yoga therapy sessions regularly

5.4.4 Study Subjects

The study involved clinically diagnosed NCLBP patients recruited from the Orthopedics Department of MGMCRI after detailed clinical evaluation and eligibility screening.

5.4.5 Sample Size

Sample size was calculated based on previous studies evaluating the effect of yoga therapy in chronic low back pain. Assuming a confidence level (α) of 0.05 and a power (1 − β) of 80%, the calculated sample size was 40 participants per group. Considering an anticipated attrition rate of approximately 10%, the final sample size was adjusted to 44 participants per group, resulting in a total sample size of 88 participants.

Sample size is 40 for each group, Adding dropout rate at 10%, sample size would be 44 for each group, i.e, a total sample size of 88.

$$n_1 = \frac{[{\sigma_1}^2 + {\sigma_2}^2][Z_{1-\alpha/2} + Z_{1-\beta}]^2}{(\mu_1 - \mu_2)^2}$$

$Z_{1-\alpha/2}$ = 1.96 at 95%of confidence with $\alpha = 0.05$
$Z_{1-\beta}$ = 0.84 at 80% of power with $\beta = 0.20$
$\sigma_1 = 1.2 \quad \sigma_2 = 0.6 \quad \mu_1 = 4.5 \; \mu_2 = 3.9$ (From previous study)
After putting these values in above formula

$$n_1 = \frac{[1.2^2 + 0.6^2][1.96 + 0.84]^2}{(4.5 - 3.9)^2}$$

$$n_1 \cong 40$$

Consider 10% of attrition

$$n = n_1 + n_1 * 10\%$$
$$n = 40 + 40 * 10\%$$
$$n = 44 \text{ (in each group)}$$

The Total required sample size is 88.

5.4.6 Sampling Procedure

A block randomization technique was employed to allocate participants into the experimental and control groups, ensuring balanced group sizes and minimizing selection bias.

5.4.7 Patient Allocation

A total of **88 eligible NCLBP patients** were randomized into two groups:

- Adjuvant Yoga Therapy (AYT) Group (n = 44):
  Received Yoga Therapy in addition to Conservative Management.
- Conservative Management (CM) Group (n = 44):
  Continued Conservative Medical Management alone.

S. No	Parameters	Variables
1	Anthropometric	Height, weight, Body Mass Index (BMI)
2	Clinical	Visual Analog Scale (VAS), Oswestry Disability Index (ODI)
3	Psychological	Perceived Stress Scale (PSS), Pain Catastrophizing Scale (PCS), Sense of Coherence (SoC)
4	Ayurvedic Constitutional Parameter	Deha Prakriti assessment using AyuSoft

5.4.8 Anthropometric Parameters

Height:

Height was measured using a Stadiometer [Easy care TM (NO: 26 SM)] mounted on the wall. The precise height in centimeters was recorded.

Weight:

Weight was calculated using an automated weighing instrument (Charder Electronics, Taichung, Taiwan 2013), which has a maximum weight restriction of 300 kg and a minimum weight limit of 2 kg.

BMI: Calculated using the formula:
BMI = Weight (kg) / Height² (m^2)

5.4.9 Clinical Outcome Measures

- Visual Analog Scale (VAS)

To assess pain intensity, the Visual Analog Scale (VAS) was used. It is a unidimensional measure of pain, consisting of a 10-cm horizontal line anchored by “no pain” at one end and “worst imaginable pain” at the other. Participants were asked to mark the point that best represented their current pain intensity. Higher scores indicate greater pain severity.

- Oswestry Disability Index (ODI)

Functional disability related to low back pain was assessed using the Oswestry Disability Index (ODI). It consists of 10 sections assessing limitations in daily activities such as pain intensity, personal care, lifting, walking, sitting, standing, and social life. Each section is scored on a scale of 0-5, and the total score is expressed as a percentage. Higher scores indicate greater functional disability.

5.4.10 Psychological Assessment

- Perceived Stress Scale (PSS):

Perceived stress was assessed using the Perceived Stress Scale (PSS), a 10-item self-report questionnaire designed to measure the degree to which situations in one’s life are appraised as stressful. Each item is scored on a 5-point Likert scale ranging from 0 (“never”) to 4 (“very often”). Total scores range from 0 to 40, with higher scores indicating greater perceived stress.

- Pain Catastrophizing Scale (PCS):

Pain-related maladaptive cognition was assessed using the Pain Catastrophizing Scale (PCS). It is a 13-item self-report questionnaire measuring three domains: rumination, magnification, and helplessness. Items are scored on a 5-point Likert scale from 0 (“not at all”) to 4 (“all the time”). Higher total scores indicate greater levels of pain catastrophizing.

- Sense of Coherence Scale (SoC) or Orientation to Life Questionnaire

Sense of Coherence was assessed using **Antonovsky’s 13-item Sense of Coherence Scale (SoC-13)**. The SoC-13 is a validated self-report questionnaire that measures an individual’s global orientation toward life and capacity to cope with stressors. It assesses three core components: **comprehensibility**, **manageability**, and **meaningfulness**. Each item is rated on a Likert scale, with higher total scores indicating a stronger sense of coherence, greater

resilience, and better adaptive coping. In the present study, SoC-13 was used as a **salutogenic outcome measure** to evaluate health-oriented coping and resilience in individuals with Non-Specific Chronic Low Back Pain (NCLBP).

5.4.11 Ayurvedic Constitutional Parameter - Deha Prakriti

Deha Prakriti was assessed using **AyuSoft**, a standardized computerized Ayurvedic assessment tool. The software evaluates the dominance of Vata, Pitta, and Kapha doshas using a structured questionnaire and algorithm-based analysis. In the present study, AyuSoft was used to assess constitutional variability and examine its influence on response to Yoga Therapy.

5.5 Yoga Therapy Protocol

The Yoga intervention used in this study was based on a Generic Yoga Therapy Protocol for Non-Specific Chronic Low Back Pain, developed through expert consultation and clinical validation at the School of Yoga Therapy, Institute of Salutogenesis and Complementary Medicine (ISCM).[27] The protocol was designed as a structured yet adaptable therapeutic module addressing both physical and psychosocial dimensions of chronic low back pain, with the aim of promoting pain reduction, functional improvement, autonomic regulation, and enhanced coping capacity, thereby supporting a salutogenic approach to management.

The intervention comprised selected āsana (physical postures), prāṇāyāma (pranic regulation through breath), dhyāna (meditatiion), and niṣpanda (relaxation) techniques., delivered for 40 minutes per session, twice weekly, over a period of 12 weeks.[27]

Table 1: Yoga Protocol

SN	Yogic Technique	Duration (min)
1.	Tadasana	1
2.	Ardha uttanasana	1
3.	Uttansana	1
4.	Marjariasana	3
5.	Anuloma-Viloma	3
6.	Nadi shuddhi Pranayama	3

7.	Vibhagiya Pranayama	3
8.	Bharamari Pranayama	3
9.	Adho Mukha Virasana	1
10.	Makarasana	1
11.	Bhujangasana	1
12.	Ardha-śhalabhasana	1
13.	Shalabhasana	1
14.	Supta Tadasana	1
15.	Setubandhasana	1
16.	Apanasana	2
17.	Supta Pavanmuktasana	3
18.	Savasana	10
	Total	40 minutes

5.6 Procedure

- Eligible NCLBP patients were informed about the study and written informed consent was obtained.
- Participants were screened based on inclusion and exclusion criteria.
- Baseline assessments, including clinical, psychological, and Prakriti evaluation, were conducted.
- Participants were randomized into AYT and CM groups.
- The AYT group received supervised yoga therapy in addition to conservative management.
- The CM group continued conservative medical management alone.
- Participants were monitored regularly for compliance and follow-up.
- Pre and post intervention data were collected.
- No adverse events or intervention-related complications were observed throughout the study.
- Lifestyle and ergonomic advice were provided to both groups.

5.7 Statistical Analysis

Data were entered into MS Excel and analyzed using SPSS 16.0 version software.

- Mean and standard deviation were used for quantitative variables.
- Frequency and percentage were used for categorical variables.
- Paired t-test or Wilcoxon signed-rank test was used for within-group comparisons.
- Independent t-test or Mann–Whitney U test was used for between-group comparisons.
- ANOVA and correlation analysis were used to assess associations between demographic and clinical variables.
- Subgroup analyses were conducted based on Prakriti classification.
- A p-value of < 0.05 was considered statistically significant.

5.8 Qualitative Analysis

A qualitative thematic analysis was performed by grouping selected items from ODI and SoC into conceptual domains to interpret patterns of functional limitation, psychological adaptation, and coherence.

6. Results

6.1. Baseline Demographic Characteristics

The baseline demographic characteristics of participants in the Adjuvant Yoga Therapy (AYT) group (n = 37) and Conservative Management (CM) group (n = 38) are presented in Table 2

The distribution of age and gender was comparable between the two groups, with the majority of participants belonging to the 31-60 years category and a predominance of females in both groups. No statistically significant differences were observed for age ($p = 0.053$) and gender ($p = 0.571$).

A statistically significant difference was observed in marital status ($p = 0.011$), with a higher proportion of widowed participants in the CM group. However, socioeconomic status, educational level, and occupational distribution were comparable between groups ($p > 0.05$).

Overall, except for marital status, baseline demographic variables were well matched, indicating comparability between groups prior to intervention.

Table 2: Demographics

SN	Variable	AYT (n=37)	CM (n=38)	χ^2 (df), p
1	**AGE CATEGORY**			
1.1	<30	9(24.3%)	3 (7.9%)	
1.2	31–45	15 (40.5%)	14 (36.8%)	7.676 (3), 0.053
1.3	46–60	12 (32.4%)	14 (36.8%)	
1.4	>60	1 (2.7%)	7 (18.4%)	
2	**GENDER**			
2.1	Male	15 (40.5%)	13 (34.2%)	0.321 (1), 0.571
2.2	Female	22 (59.5%)	25 (65.8%)	
3	**MARITAL STATUS**			
3.1	Married	28 (75.7%)	29 (76.3%)	9.006 (2), 0.011
3.2	Single	9 (24.3%)	3 (7.9%)	
3.3	Widow	0 (0.0%)	6 (15.8%)	
4	**SOCIOECONOMIC STATUS**			
4.1	Lower	7 (18.9%)	11 (28.9%)	
4.2	Lower-middle	13 (35.1%)	16 (42.1%)	2.901 (3), 0.407
4.3	Middle	12 (32.4%)	9 (23.7%)	
4.4	Upper-middle	5 (13.5%)	2 (5.3%)	
5	**EDUCATION**			
5.1	Graduate	13 (35.1%)	12 (31.6%)	
5.2	Higher secondary	2 (5.4%)	0 (0.0%)	2.827 (3), 0.419
5.3	Primary	8 (21.6%)	12 (31.6%)	

SN	Variable	AYT (n=37)	CM (n=38)	χ^2 (df), p
5.4	Secondary	14 (37.8%)	14 (36.8%)	
6	**OCCUPATION**			1.477 (7), 0.983
6.1	Driver	1 (2.7%)	1 (2.6%)	
6.2	Homemaker	17 (45.9%)	21 (55.3%)	
6.3	Manual worker	3 (8.1%)	2 (5.3%)	
6.4	Office work	6 (16.2%)	5 (13.2%)	
6.5	Retired	1 (2.7%)	1 (2.6%)	
6.6	Skilled worker	4 (10.8%)	5 (13.2%)	
6.7	Student	4 (10.8%)	2 (5.3%)	
6.8	Supervisor	1 (2.7%)	1 (2.6%)	

6.2 Lifestyle and Anthropometric Characteristics

Lifestyle and anthropometric characteristics are presented in Table 3.

Physical activity levels were similar between the groups, with most participants reporting low to moderate activity (p = 0.569). BMI distribution was also comparable, with the majority classified as normal or overweight (p = 0.812).

Table 3. Lifestyle and anthropometric characteristics

S. No	Variable	AYT (n=37)	CM (n=38)	χ^2 (df), p
1	**PHYSICAL ACTIVITY**			0.324 (1), 0.569
1.1	Low	19 (51.4%)	22 (57.9%)	
1.2	Moderate	18 (48.6%)	16 (42.1%)	
2	**BMI Category**			
2.1	Normal	18 (48.6%)	16 (42.1%)	0.415 (2), 0.812
2.2	Overweight	17 (45.9%)	19 (50.0%)	
2.3	Obese	2 (5.4%)	3 (7.9%)	

6.3 Baseline Distribution of Deha Prakriti

The distribution of Deha Prakriti subtypes is presented in Table 4.

The distribution of Deha Prakriti subtypes included Kapha-pradhāna Pittānubandhi (KPPA), Kapha-pradhāna Vātānubandhi (KPVA), Pitta-pradhāna Kaphaanubandhi (PPKA), Pitta-pradhāna Vātānubandhi (PPVA), Vāta-pradhāna Kaphaanubandhi (VPKA), and Vāta-pradhāna Pittānubandhi (VPPA). All six Prakriti subtypes: KPPA, KPVA, PPKA, PPVA, VPKA, and VPPA were represented in both groups. In the AYT group, the most common subtypes were KPPA (24.3%) and VPPA (21.6%), whereas in the CM group, KPPA (23.7%) and KPVA (21.1%) were more prevalent.

No statistically significant difference was observed in Prakriti distribution between the groups ($\chi^2 = 3.064$, df = 5, p = 0.690), indicating baseline comparability.

The distribution of Deha Prakriti subtypes among participants in the Adjuvant Yoga Therapy (AYT) group (n = 37) and Conservative Management (CM) group (n = 38) is presented in Table 4. the Two groups did not differ significantly ($\chi^2 = 3.064$, df = 5, p = 0.690), indicating that the groups were comparable at baseline with respect to constitutional types.

Table 4: Objective 1: To investigate the effect of Yoga Therapy in Back pain

SN	Prakriti subtype	AYT (n=37)	CM (n=38)	χ^2 (df), p
1	KPPA	9 (24.3%)	9 (23.7%)	3.064 (5), 0.690
2	KPVA	4 (10.8%)	8 (21.1%)	
3	PPKA	5 (13.5%)	7 (18.4%)	
4	PPVA	4 (10.8%)	4 (10.5%)	
5	VPKA	7 (18.9%)	6 (15.8%)	
6	VPPA	8 (21.6%)	4 (10.5%)	

KPPA: Kapha-pradhāna Pittānubandhi; KPVA: Kapha-pradhāna Vātānubandhi; PPKA: Pitta-pradhāna Kaphaanubandhi; PPVA: Pitta-pradhāna Vātānubandhi; VPKA: Vāta-pradhāna Kaphaanubandhi; VPPA: Vāta-pradhāna Pittānubandhi.

6.4 Within-Group Changes

Within the AYT group, statistically significant improvements were observed across all outcome measures, including VAS, ODI, PSS, PCS, and SoC ($p < 0.001$).

In the CM group, significant improvement was observed only in VAS and PCS, while changes in ODI and PSS were not statistically significant. Sense of Coherence (SoC) showed a slight but significant decline.

Table 5A. Pre-post changes in the AYT (n = 37)

Outcome	Baseline Mean ± SD	Post-treatment Mean ± SD	Mean change (95% CI)	t (df)	p-value
VAS	4.70 ± 1.53	3.11 ± 1.33	−1.60 (−2.04 to −1.15)	7.22 (36)	**<0.001**
ODI (%)	38.12 ± 12.59	28.81 ± 12.68	−9.32 (−12.26 to −6.38)	6.43 (36)	**<0.001**
PSS	21.38 ± 3.55	13.84 ± 3.52	−7.54 (−8.35 to −6.73)	18.85 (36)	**<0.001**
PCS	27.78 ± 7.22	20.14 ± 6.86	−7.65 (−8.87 to −6.43)	12.71 (36)	**<0.001**
SOC	48.59 ± 7.83	53.65 ± 7.58	+5.05 (+2.32 to +7.79)	−3.75 (36)	**0.001**

Table 5B. Pre-post changes in the CM (n = 38)

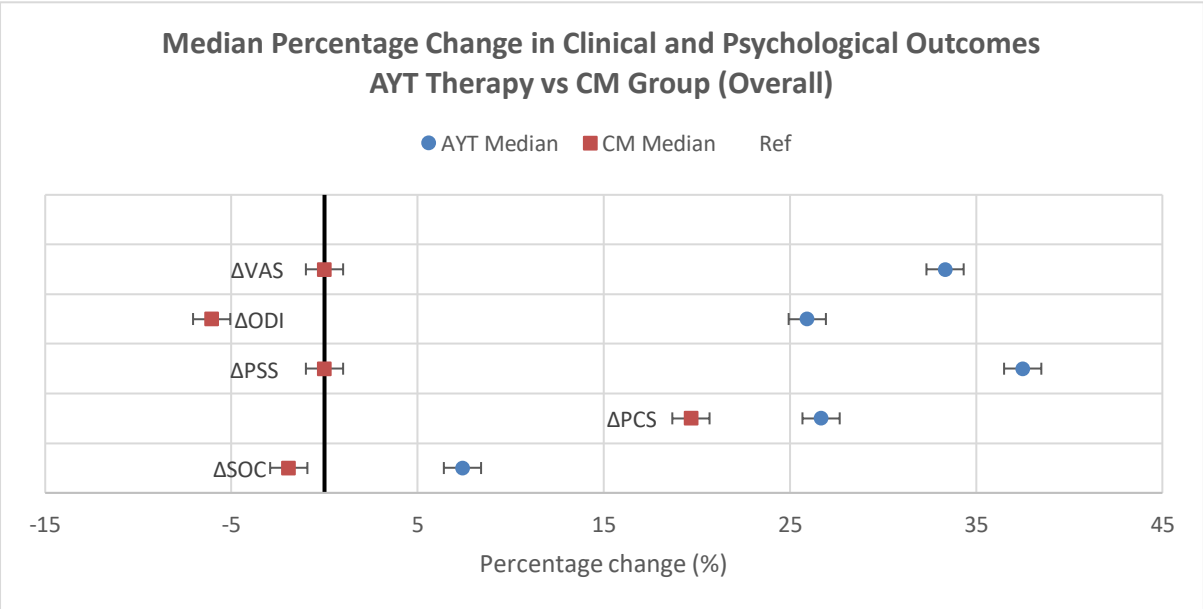
Outcome	Baseline Mean ± SD	Post-treatment Mean ± SD	Mean change (95% CI)	t (df)	p-value
VAS	4.66 ± 1.36	4.37 ± 1.24	−0.29 (−0.48 to −0.10)	3.16 (37)	**0.003**
ODI (%)	41.21 ± 12.96	43.59 ± 11.52	+2.39 (−1.39 to +6.17)	−1.28 (37)	**0.209**
PSS	19.92 ± 3.25	19.74 ± 3.17	−0.18 (−0.53 to +0.16)	1.10 (37)	**0.280**
PCS	26.21 ± 4.67	20.66 ± 6.71	−5.55 (−8.53 to −2.58)	3.78 (37)	**0.001**
SOC	49.03 ± 4.81	48.45 ± 4.85	−0.58 (−1.13 to −0.03)	2.14 (37)	**0.039**

6.5 Between-Group Comparison

Between-group comparison demonstrated significantly greater improvement in the AYT group compared to the CM group for VAS, ODI, PSS, and SoC ($p < 0.001$). No significant difference between groups was observed for PCS ($p = 0.077$).

Table 6. Percentage change (Δ%) in clinical and psychological outcomes between AYT and CM groups

Outcome	AYT group (n=37)	CM group (n=38)	Mann–Whitney U	Z	p-value
ΔVAS (%)	33.33 (16.67–50.00)	0.00 (0.00–14.88)	232.0	−5.234	**<0.001**
ΔODI (%)	25.93 (9.91–41.45)	−6.06 (−24.33–9.79)	237.0	−4.939	**<0.001**
ΔPSS (%)	37.50 (27.27–43.65)	0.00 (−1.04–4.82)	0.0	−7.463	**<0.001**
ΔPCS (%)	26.67 (22.22–30.22)	19.68 (−3.89–40.16)	536.0	−1.770	**0.077**
ΔSOC (%)	7.41 (0.89–18.88)	−1.92 (−2.34–1.83)	297.0	−4.305	**<0.001**



6.6 Prakriti-wise Response to Intervention

Prakriti-based subgroup analysis revealed differential responsiveness to the intervention.

Certain Prakriti subtypes demonstrated greater multidimensional improvement in pain, disability, stress, and coherence, while others showed selective or limited response patterns. These findings suggest that therapeutic response to Yoga Therapy is constitution-dependent rather than uniform.

Prakriti-based subgroup analysis using AyuSoft revealed **distinct and heterogeneous response patterns** across constitutional types (Tables 7A–7F).

The **Kapha-pradhāna Pittānubandhi (KPPA)** subtype demonstrated the most consistent and significant multidimensional improvement, with the Yoga group showing significantly greater reduction in pain (VAS), perceived stress (PSS), functional disability (ODI), and significant improvement in sense of coherence (SoC) compared to control ($p < 0.01$). No significant difference was observed for pain catastrophizing (PCS).

The **Kapha-pradhāna Vātānubandhi (KPVA)** subtype showed significant improvement in pain and stress ($p < 0.05$), while changes in disability, catastrophizing, and coherence were not statistically significant, indicating partial responsiveness.

In the **Pitta-pradhāna Kaphaanubandhi (PPKA)** subtype, significant improvements were observed in pain, stress, and disability ($p < 0.05$), whereas changes in PCS and SoC were not significant.

The **Pitta-pradhāna Vātānubandhi (PPVA)** subtype demonstrated significant improvement in pain, stress, and coherence ($p < 0.05$), with non-significant changes in disability and catastrophizing.

The **Vāta-pradhāna Kaphaanubandhi (VPKA)** subtype showed significant improvements in pain, stress, disability, and coherence ($p < 0.05$), while PCS remained non-significant.

The **Vāta-pradhāna Pittānubandhi (VPPA)** subtype demonstrated significant improvement only in perceived stress ($p < 0.01$), with non-significant changes in other domains.

The **Kapha-associated subtypes (KPPA, VPKA)** showed the most consistent multidimensional improvement, with significant changes across pain, stress, disability, and sense of coherence, indicating high responsiveness to Yoga Therapy.

The **Pitta-dominant subtypes (PPKA, PPVA)** exhibited **selective responsiveness**, with significant improvements primarily in pain and stress domains, and variable changes in disability and coherence.

In contrast, the **Vata-associated subtypes (KPVA, VPPA)** demonstrated **restricted or domain-specific response**, with significant improvement largely confined to perceived stress, and limited or non-significant changes in functional and coping outcomes.

Pain catastrophizing (PCS) did not show consistent between-group differences across subtypes, suggesting that this domain may be less sensitive to short-term intervention or influenced by non-specific factors.

Overall, the findings indicate that **therapeutic response to Yoga Therapy is constitution-dependent**, with Kapha-dominant subtypes showing broader multidimensional benefits, while Vata-dominant subtypes exhibited more selective or limited responsiveness. These findings further establish that **therapeutic efficacy of Yoga Therapy is constitution-dependent rather than uniform**, with Prakriti acting as a **functional moderator of both the magnitude and domain of clinical response**. This supports the feasibility of **Prakriti-guided personalization in integrative rehabilitation**, bridging traditional Ayurvedic principles with contemporary outcome-based clinical frameworks.

Table 7A. Kapha-pradhāna Pittānubandhi (KPPA), (AYT n=9, CM n=9)

Outcome	Yoga Median (IQR)	Control Median (IQR)	Median Difference	p-value
ΔVAS %	50.00 (36.67–56.25)	16.67 (0.00–29.17)	+33.33	0.003
ΔPSS %	41.18 (33.64–45.56)	0.00 (−4.36–4.46)	+41.18	<0.001
ΔODI %	46.15 (41.45–50.00)	9.77 (−0.55–19.46)	+36.38	0.004
ΔPCS %	26.92 (23.61–33.44)	19.36 (−4.00–35.94)	+7.56	0.112
ΔSOC %	13.73 (2.47–30.37)	−2.22 (−4.17–0.00)	+15.95	0.001

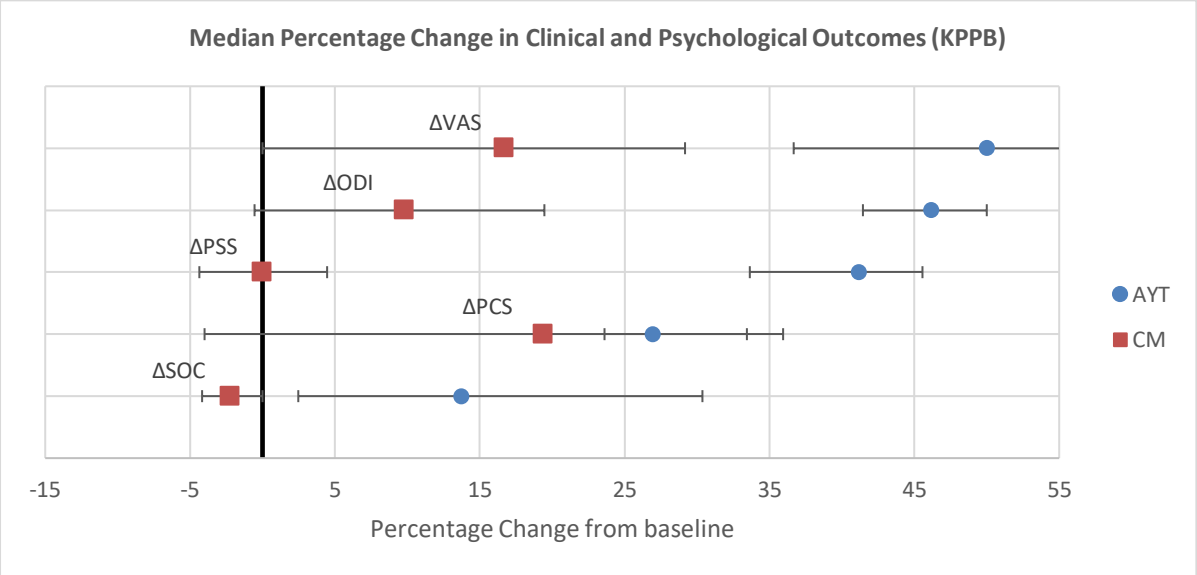


Table 7B. Kapha-pradhāna Vātānubandhi (KPVA), (AYT n=4, CM n=8)

Outcome	Yoga Median (IQR)	Control Median (IQR)	Median Difference	p-value
ΔVAS %	16.67 (4.17–29.17)	0.00 (0.00–0.00)	+16.67	0.023
ΔPSS %	40.64 (29.67–48.61)	2.17 (−6.82–5.36)	+38.47	0.006
ΔODI %	24.93 (17.40–27.39)	−14.40 (−40.24–37.15)	+39.33	0.396
ΔPCS %	24.05 (18.85–31.82)	26.86 (−10.00–45.87)	−2.81	1.000
ΔSOC %	0.32 (−18.78–109.14)	−2.06 (−3.66–−0.48)	+2.38	1.000

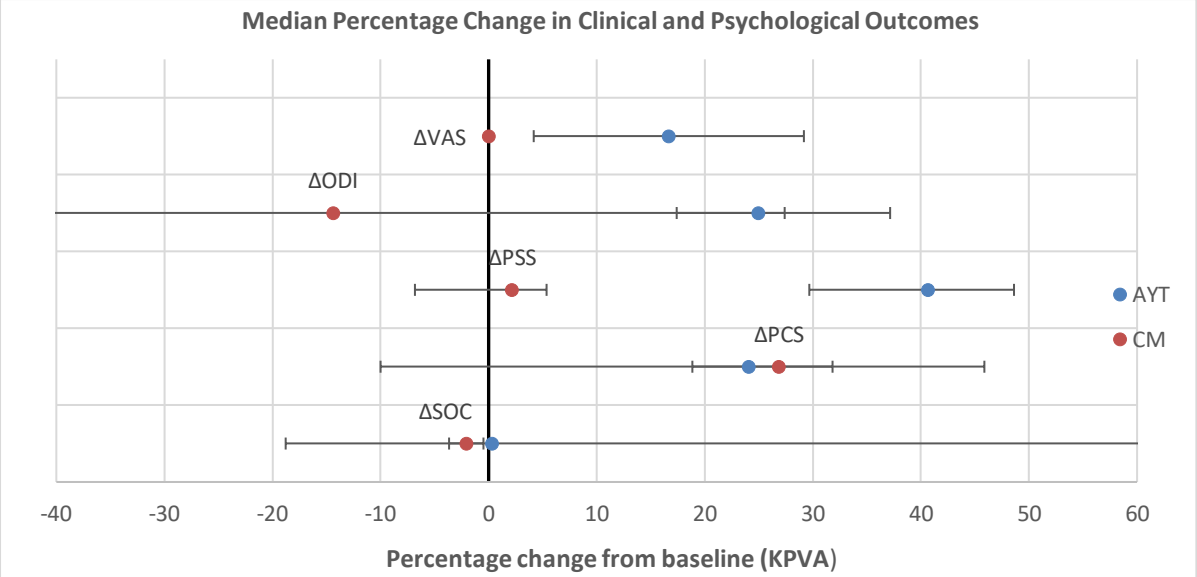


Table 7C. Pitta-pradhāna Kaphaanubandhi (PPKA)
(AYT n=5, CM n=7)

Outcome	Yoga Median (IQR)	Control Median (IQR)	Median Difference	p-value
ΔVAS %	33.33 (12.50–46.67)	0.00 (0.00–16.67)	+33.33	0.035
ΔPSS %	38.10 (30.11–44.72)	4.55 (0.00–5.00)	+33.55	0.004
ΔODI %	36.94 (10.72–42.29)	−12.06 (−20.72–3.51)	+49.00	0.028
ΔPCS %	30.44 (23.33–34.66)	14.29 (−4.76–25.93)	+16.15	0.088
ΔSOC %	0.00 (−10.33–14.86)	1.96 (0.00–4.00)	−1.96	0.745

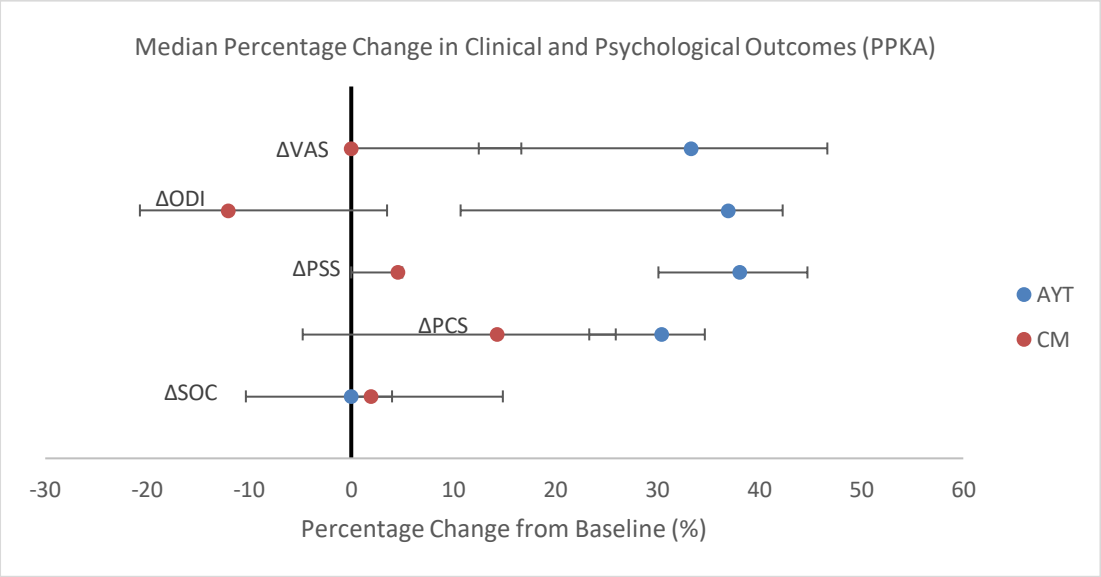


Table 7D. Pitta-pradhāna Vātānubandhi (PPVA)
(AYT n=4, CM n=4)

Outcome	Yoga Median (IQR)	Control Median (IQR)	Median Difference	p-value
ΔVAS %	66.67 (54.17–72.92)	0.00 (0.00–0.00)	+66.67	0.013
ΔPSS %	20.81 (12.64–34.42)	2.78 (−7.14–5.80)	+18.03	0.021
ΔODI %	8.41 (3.75–9.98)	−11.31 (−21.53–5.41)	+19.72	0.083
ΔPCS %	21.53 (18.48–26.10)	43.45 (8.33–67.39)	−21.92	0.248
ΔSOC %	5.66 (3.87–15.81)	−1.85 (−2.01–0.94)	+7.51	0.021

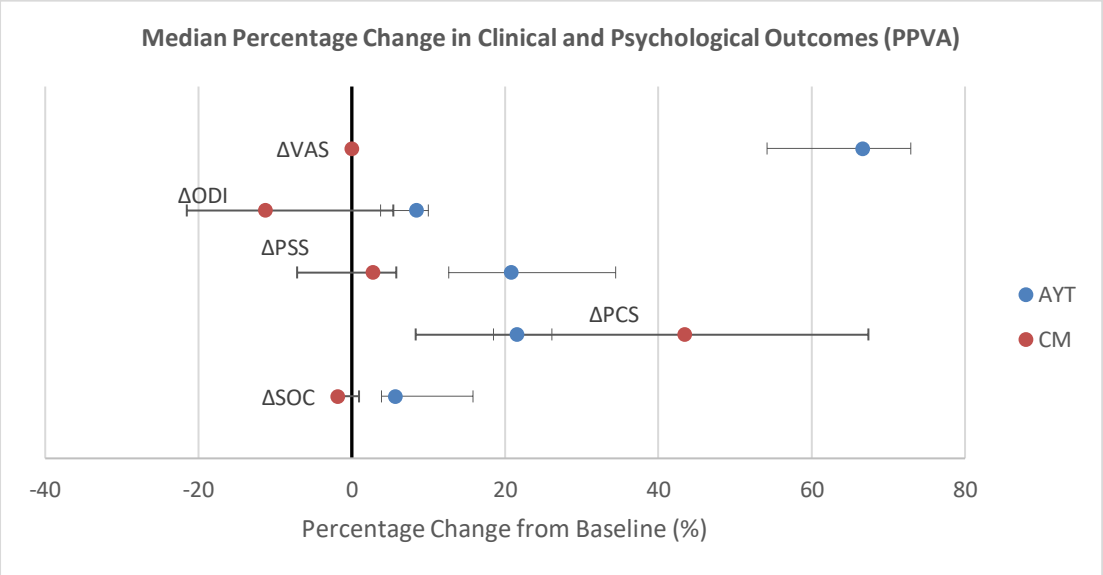


Table 7E. Vāta-pradhāna Kaphaanubandhi (VPKA)
(AYT n=7, CM n=6)

Outcome	**Yoga Median (IQR)**	**Control Median (IQR)**	**Median Difference**	**p-value**
ΔVAS %	16.67 (0.00–25.00)	0.00 (0.00–4.17)	+16.67	0.048
ΔPSS %	37.50 (33.33–40.91)	0.00 (−1.14–0.93)	+37.50	0.002
ΔODI %	13.33 (9.91–25.93)	−29.01 (−44.99–−13.64)	+42.34	0.003
ΔPCS %	23.33 (22.58–27.59)	18.26 (−19.32–36.94)	+5.07	0.317
ΔSOC %	6.98 (1.79–16.67)	−2.25 (−4.68–2.29)	+9.23	0.032

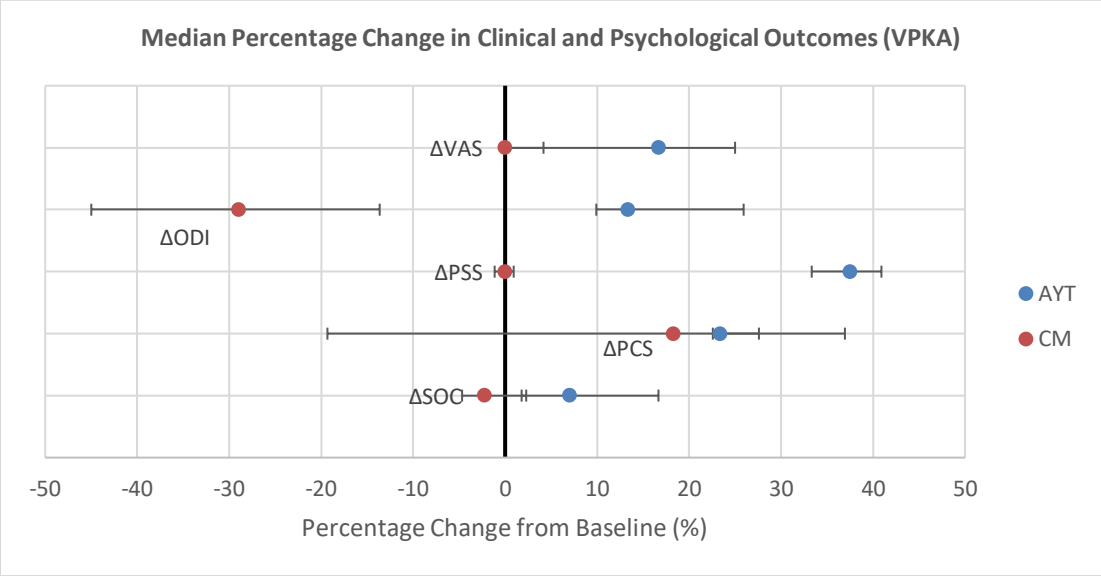
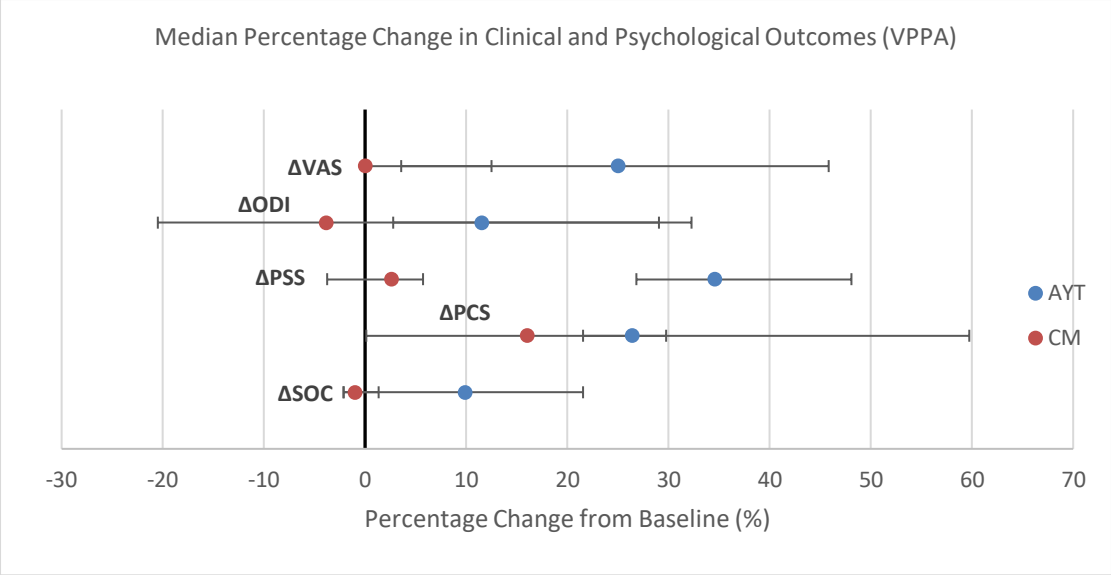


Table 7F. Vāta-pradhāna Pittānubandhi (VPPA)
(AYT n=8, CM n=4)

Outcome	Yoga Median (IQR)	Control Median (IQR)	Median Difference	p-value
ΔVAS %	**25.00 (3.57–45.83)**	**0.00 (0.00–12.50)**	**+25.00**	**0.092**
ΔPSS %	**34.60 (26.82–48.08)**	**2.63 (−3.75–5.73)**	**+31.97**	**0.006**
ΔODI %	**11.52 (2.78–29.05)**	**−3.82 (−20.49–32.27)**	**+15.34**	**0.234**
ΔPCS %	**26.39 (21.55–29.76)**	**16.00 (0.12–59.73)**	**+10.39**	**0.234**
ΔSOC %	**9.86 (−2.13–21.55)**	**−0.98 (−2.12–1.34)**	**+10.84**	**0.174**



6.7 Influence of Prakriti on Yoga Therapy Outcomes

The effects of AYT and Prakriti on clinical and psychological outcomes are presented in Tables 9–13.

A significant overall improvement over time was observed across most outcome measures, particularly for pain (VAS), disability (ODI), perceived stress (PSS), and sense of coherence (SoC) ($p < 0.05$).

The **change over time differed significantly between the AYT and CM groups** for VAS, ODI, PSS, and SoC ($p < 0.001$), indicating greater improvement with AYT.

The **change in pain (VAS) and disability (ODI) varied across Prakriti subtypes**, suggesting constitution-specific differences in treatment response. Furthermore, the **effect of AYT on pain reduction differed across Prakriti types** ($p = 0.022$), indicating that the magnitude of improvement was influenced by constitutional variation.

No significant interaction effects were observed for PCS, although a significant baseline difference across Prakriti was noted ($p = 0.001$).

Overall, these findings suggest that while AYT is effective across participants, **its therapeutic impact is modulated by Prakriti**, supporting the concept of constitution-based

personalization in Yoga Therapy.

Figure 9. Effects of Yoga Therapy and Prakriti on change in pain intensity (VAS):

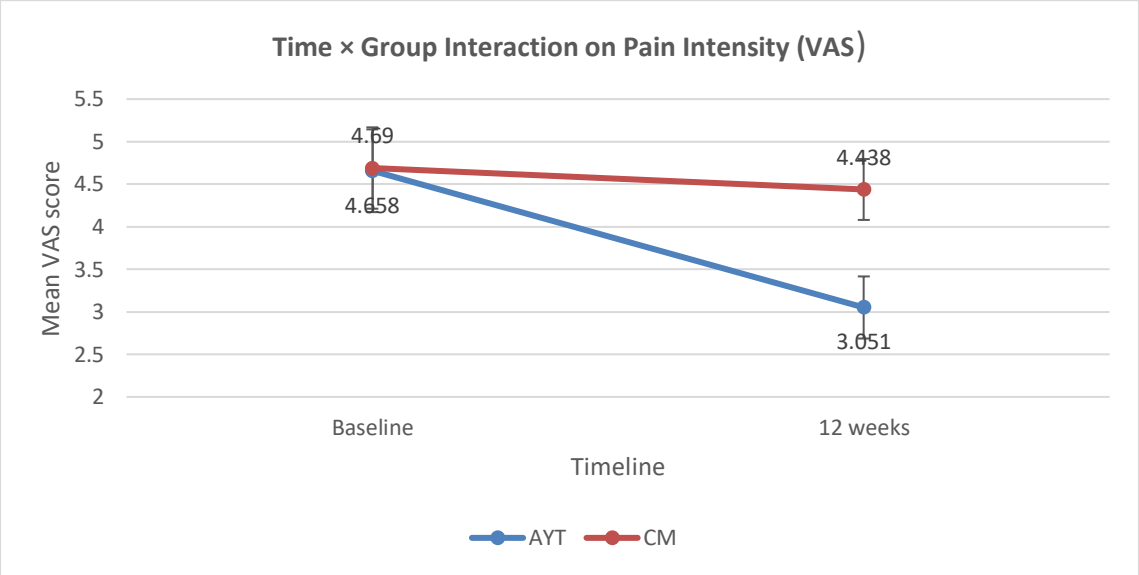


Figure 10. Effects of Yoga Therapy and Prakriti on Disability (ODI

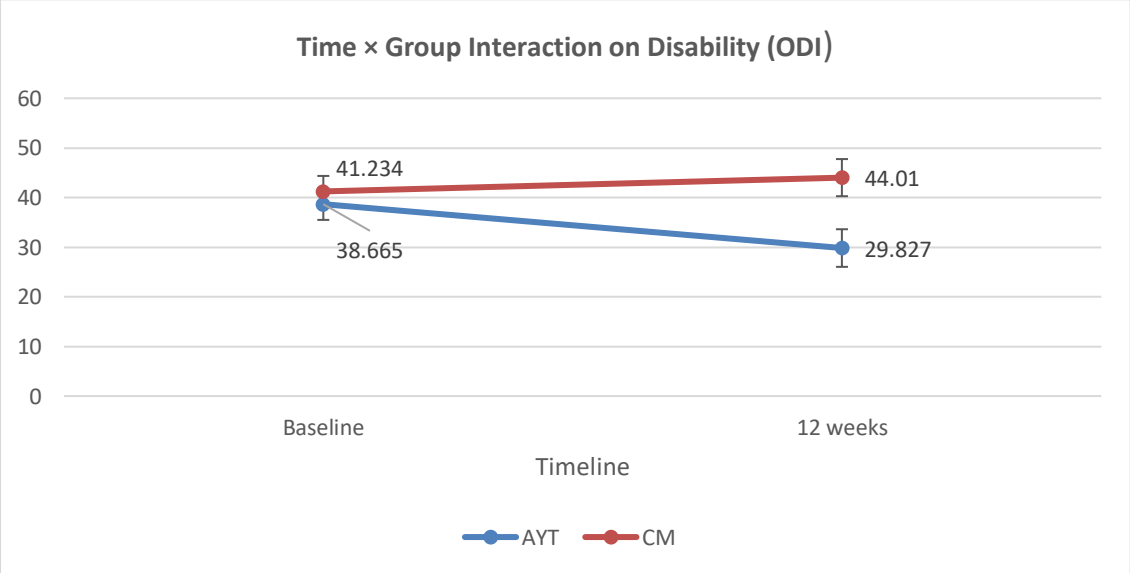


Figure 11. Effects of Yoga Therapy and Prakriti on Perceived Stress (PSS)

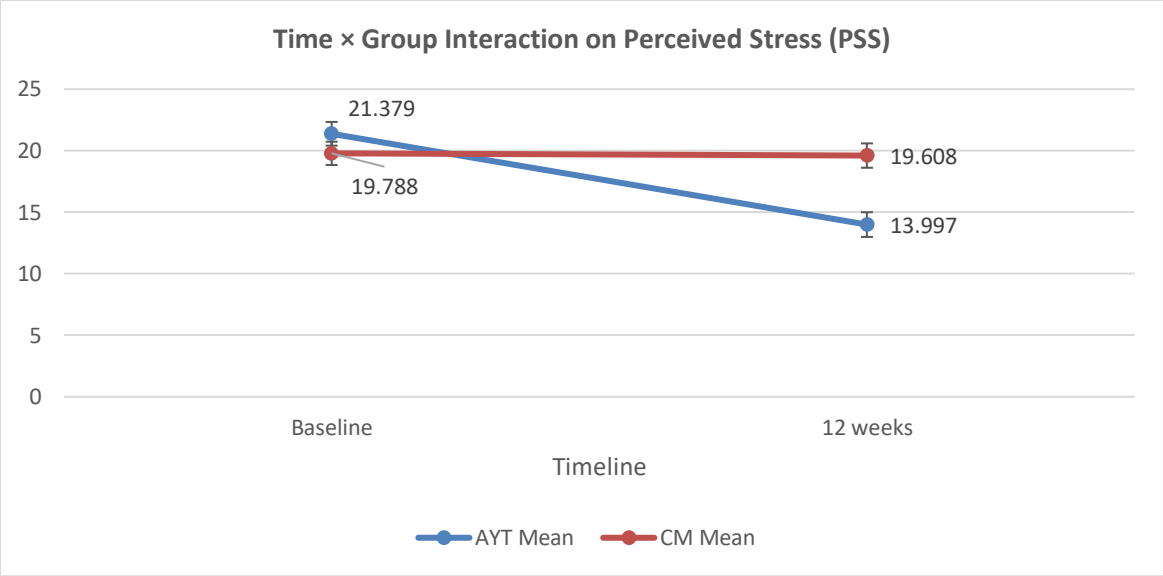


Figure 12. Effects of Yoga Therapy and Prakriti on Pain Catastrophizing (PCS):

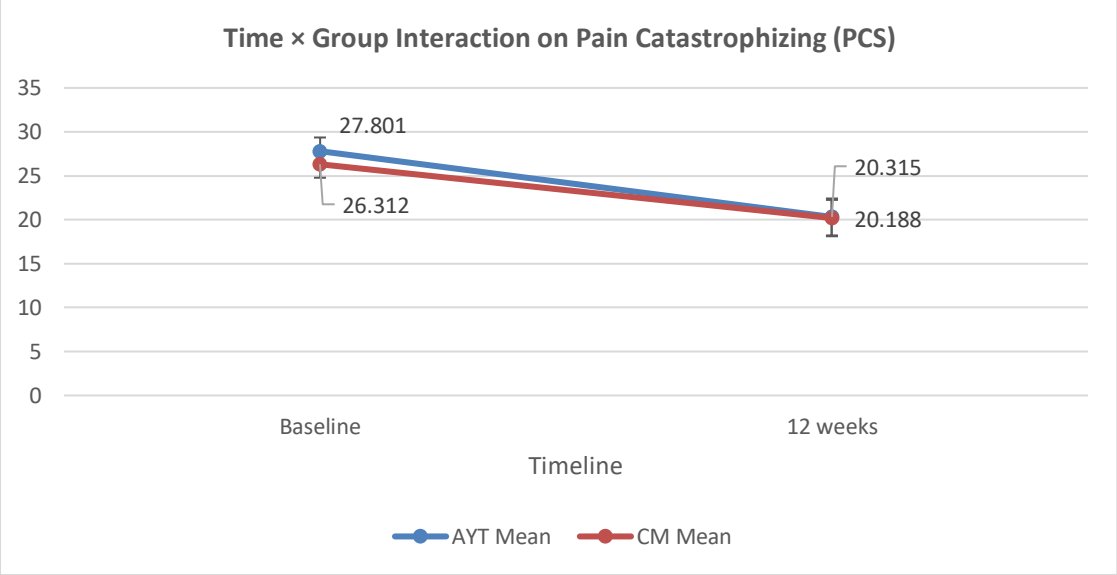
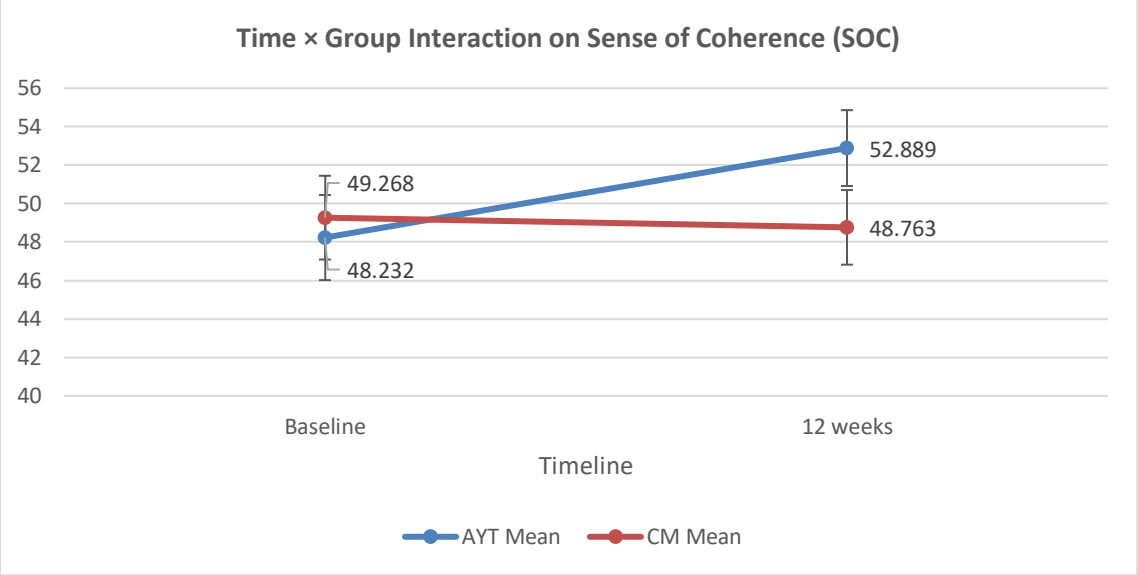


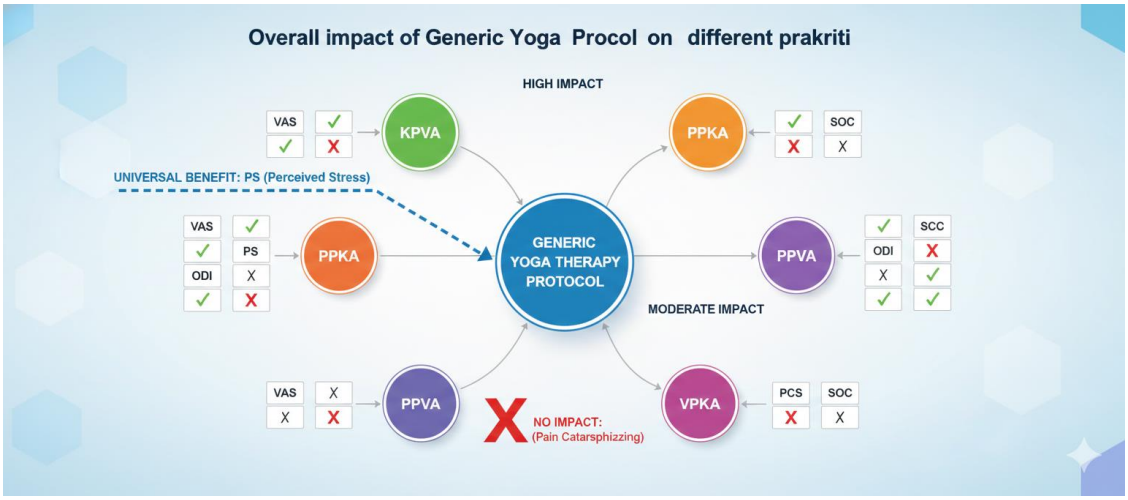
Figure 13. Effects of Yoga Therapy and Prakriti on Sense of Coherence (SoC)



Outcome	Timeline	AYT Mean ± SE	CM Mean ± SE	Time × Group Interaction (p value)
VAS	Baseline	4.658 ± 0.158	4.590 ± 0.159	
	12 weeks	3.051 ± 0.337	4.438 ± 0.341	**<0.001**
ODI	Baseline	38.665 ± 1.617	41.234 ± 1.591	
	12 weeks	29.827 ± 1.937	44.010 ± 1.907	**<0.001**
PSS	Baseline	21.379 ± 0.492	19.788 ± 0.484	
	12 weeks	13.997 ± 0.513	19.608 ± 0.505	**<0.001**
PCS	Baseline	27.801 ± 0.795	26.312 ± 0.783	
	12 weeks	20.315 ± 1.072	20.188 ± 1.056	**0.434**
SOC	Baseline	48.232 ± 1.129	49.268 ± 1.111	
	12 weeks	52.889 ± 1.006	48.763 ± 0.990	**0.001**

Group / Variable	VAS	PSS	ODI	PCS	SOC
KPPA	✓	✓	✓	✗	✓
KPVA	✓	✓	✗	✗	✗
PPKA	✓	✓	✓	✗	✗
PPVA	✓	✓	✗	✗	✓
VPKA	✓	✓	✓	✗	✓
VPPA	✗	✓	✗	✗	✗

KPPA: Kapha-pradhāna Pittānubandhi; KPVA: Kapha-pradhāna Vātānubandhi; PPKA: Pitta-pradhāna Kaphaanubandhi; PPVA: Pitta-pradhāna Vātānubandhi; VPKA: Vāta-pradhāna Kaphaanubandhi; VPPA: Vāta-pradhāna Pittānubandhi.



The findings of the present study indicate that Generic Yoga Therapy is a clinically superior adjunct to Conservative Management in individuals with non-specific chronic low back pain. The observed benefits were not limited to pain reduction alone, but extended to functional recovery and improvement in psychological well-being, supporting the multidimensional relevance of Yoga Therapy in chronic pain rehabilitation.

A notable improvement in Sense of Coherence (SoC-13) suggests that Yoga Therapy may

enhance adaptive stress processing, resilience, and self-regulatory capacity, consistent with a salutogenic model of care. In contrast, pain catastrophizing (PCS) demonstrated comparatively lower responsiveness to short-term intervention, indicating that catastrophizing may represent a more stable cognitive vulnerability that is less amenable to brief treatment exposure and may require longer duration or targeted psychological components.

Importantly, the therapeutic response to Yoga Therapy was not uniform across participants, but appeared to be constitution-specific. Prakriti subgroup analysis demonstrated that KPPA and VPKA showed the greatest multidimensional improvement across clinical and psychological domains. PPKA and PPVA exhibited partial improvement, predominantly within pain and stress-related outcomes. In comparison, KPVA and VPPA demonstrated restricted responsiveness, highlighting meaningful heterogeneity in treatment sensitivity.

Furthermore, baseline psychological vulnerability particularly elevated stress and catastrophizing—appeared to be strongly linked with Prakriti classification, providing a plausible explanation for differential outcome patterns across subgroups. Overall, these findings suggest that Prakriti classification may predict both the magnitude and the domain of response to Yoga Therapy, supporting the feasibility of constitution-guided personalization in integrative rehabilitation for chronic low back pain.

This study provides one of the first quantitative demonstrations that Prakriti classification may be used as a practical basis for personalizing Yoga Therapy in musculoskeletal rehabilitation.

Also, Improvement was observed across domains of function, stress, and coherence. Thematic analysis indicated patterns of improvement in functional ability, psychological adaptation, and coherence, particularly in the AYT group.

DISCUSSION

Principal Findings

The present study demonstrates that Adjuvant Yoga Therapy (AYT) produces significantly greater improvement than Conservative Management (CM) across key clinical and psychological outcomes in individuals with non-specific chronic low back pain. Participants

receiving AYT showed superior reductions in pain intensity (VAS) and functional disability (ODI), along with significant improvements in perceived stress (PSS) and sense of coherence (SoC-13).

Repeated-measures ANOVA revealed strong interaction effects between time and group, with large effect sizes, indicating that the observed improvements were attributable to the yoga intervention rather than natural recovery alone. The most pronounced effects were observed in pain reduction and stress modulation.

Pain catastrophizing (PCS) improved significantly in both groups, without a statistically superior effect of AYT. This suggests that catastrophizing may be partially responsive to general care and symptom change, but may require longer-duration or targeted cognitive interventions for differential improvement.

Prakriti-Based Differential Response

A key contribution of this study is the identification of constitution-dependent variability in therapeutic response. The findings demonstrate that response to a standardized yoga protocol is not uniform, but varies across Prakriti subtypes.

KPPA and VPKA subtypes demonstrated consistent multidomain improvement across pain, disability, stress, and coherence, indicating high responsiveness to the intervention. PPKA and PPVA showed selective improvement, primarily in pain and stress, with comparatively limited functional and coherence gains. In contrast, KPVA and VPPA exhibited restricted response patterns, characterized by stress reduction without corresponding functional recovery.

These findings support the concept of Prakriti as a moderator of treatment response and highlight the need for constitution-based personalization in Yoga Therapy.

Physiological and Cognitive Mechanisms

The observed differential responses may be interpreted within the Ayurvedic framework of dosha predominance. Kapha-dominant constitutions appear to demonstrate greater stability and responsiveness in physical domains, facilitating functional recovery. In contrast, Vata-dominant constitutions may exhibit higher neuropsychological sensitivity, leading to

stronger psychological responses but limited functional improvement.

Significant reductions in perceived stress suggest that AYT may influence autonomic and neuroendocrine regulation, potentially through modulation of parasympathetic activity and stress-response pathways. However, the absence of differential effects in PCS indicates that pain-related cognitive patterns may be more stable and constitutionally influenced, requiring targeted cognitive or educational interventions.

Thematic Interpretation of Outcomes

A theoretical thematic analysis was conducted by mapping ODI and SoC domains into broader experiential constructs, supported by PSS and PCS, to provide a multidimensional interpretation of patient outcomes.

The findings reveal six interconnected themes:

- **Functional Restoration:** AYT facilitated improvements across mobility, daily activity, and participation domains, indicating recovery of functional independence.
- **Pain-Behavior Recalibration:** Reduction in pain was accompanied by increased activity engagement, suggesting disruption of the pain–avoidance cycle.
- **Stress Regulation:** Significant reduction in perceived stress reflects improved emotional regulation and reduced internal burden.
- **Cognitive Reframing:** Integrated reduction in catastrophizing alongside clinical improvement indicates adaptive cognitive restructuring.
- **Enhanced Coherence:** Improvements in SoC suggest increased comprehensibility, manageability, and meaningfulness, reflecting strengthened adaptive capacity.
- **Constitutional Variability:** Differential response patterns across Prakriti subtypes indicate that therapeutic outcomes are individualized and constitution-dependent.

Together, these themes demonstrate a transition from functional limitation and psychological distress toward integrated adaptive functioning.

Clinical and Salutogenic Implications

The findings indicate that AYT provides a multidimensional therapeutic advantage in chronic low back pain, extending beyond symptom reduction to include functional recovery, stress regulation, and enhancement of adaptive coping capacity.

Improvement in sense of coherence supports a shift toward a **salutogenic model of care**, wherein health is understood as the capacity for adaptation and integration rather than merely absence of disease. The observed variability across Prakriti subtypes further suggests

that salutogenic outcomes are constitutionally moderated, reinforcing the importance of personalized therapeutic approaches.

Novelty and Contribution

This study represents one of the first randomized controlled investigations integrating Yoga Therapy, chronic low back pain, Prakriti stratification, and multidimensional outcome assessment within a single framework.

The findings establish Prakriti as a measurable moderator of therapeutic response and demonstrate the feasibility of constitution-based personalization in integrative rehabilitation. By linking traditional Ayurvedic concepts with contemporary clinical outcomes and salutogenic theory, the study provides a novel evidence-informed model for individualized Yoga Therapy.

CONCLUSION

The present study demonstrates that Adjuvant Yoga Therapy (AYT) is an effective and clinically meaningful adjunct to conventional conservative management in individuals with non-specific chronic low back pain. The intervention produced significant multidimensional improvements, encompassing pain reduction, functional restoration, stress regulation, and enhancement of salutogenic coping capacity.

Importantly, the findings indicate that therapeutic response is not uniform, but is significantly influenced by Ayurvedic constitutional type (Prakriti). This highlights the relevance of Prakriti as a moderating factor in treatment outcomes and supports the feasibility of constitution-guided personalization of Yoga Therapy within integrative rehabilitation.

Distinct response patterns observed across Prakriti subtypes suggest practical implications for protocol design. KPPA and VPKA subtypes demonstrated broad multidomain responsiveness and may be effectively managed using standardized yoga protocols. PPKA and PPVA exhibited selective responsiveness, indicating the need for targeted enhancement of functional and coherence-related outcomes. In contrast, KPVA and VPPA showed comparatively limited responsiveness, suggesting the requirement for individualized

strategies emphasizing stress regulation, autonomic stabilization, and progressive adaptation.

Overall, this study provides empirical evidence for a constitution-informed framework of Yoga Therapy, advancing the integration of Ayurvedic principles with contemporary clinical practice. The findings support a shift toward personalized, multidimensional, and salutogenic models of care in musculoskeletal rehabilitation.

References:

1. Nicol V, Verdaguer C, Daste C, et al. Chronic low back pain: a narrative review of recent international guidelines for diagnosis and conservative treatment. *J Clin Med*. 2023;12(4):1685. doi:10.3390/jcm12041685.
2. Hoy D, Bain C, Williams G, et al. A systematic review of the global prevalence of low back pain. *Arthritis Rheum*. 2012;64(6):2028–2037. doi:10.1002/art.34347.
3. Zheng X. Progress of research on the mechanisms by which yoga contributes to the rehabilitation of chronic low back pain. *World J Yoga Phys Ther Rehabil*. 2019;1(1). doi:10.33552/wjypr.2019.01.000521.
4. S DRA, Raju GN, B DD, et al. A comparative study of efficacy of thiocolchicoside with diclofenac vs eperisone with diclofenac in patients with back pain. *Surg Update Int J Surg Orthop*. 2017;3(1):1–5. doi:10.17511/ijoso.2017.i01.01.
5. Speed C. Low back pain. *BMJ*. 2004;328(7448):1119–1121.
6. Stanton TR, Henschke N, Maher CG, et al. After an episode of acute low back pain, recurrence is unpredictable and not as common as previously thought. *Spine (Phila Pa 1976)*. 2008;33(26):2923–2928. doi:10.1097/BRS.0b013e31818a3167.
7. Billy GG, Lemieux SK, Chow MX. Changes in lumbar disk morphology associated with prolonged sitting assessed by magnetic resonance imaging. *PM R*. 2014;6(9):790–795. doi:10.1016/j.pmrj.2014.02.014.
8. Fatoye F, Gebrye T, Mbada CE, et al. Clinical and economic burden of low back pain in low- and middle-income countries: a systematic review. *BMJ Open*. 2023;13(1):e064119. doi:10.1136/bmjopen-2022-064119.
9. Chou R, Deyo R, Friedly J, et al. *Noninvasive treatments for low back pain*. Comparative Effectiveness Review No. 169. Rockville (MD): Agency for Healthcare Research and Quality; 2016.
10. Katz JN. Lumbar disc disorders and low-back pain: socioeconomic factors and consequences. *J Bone Joint Surg Am*. 2006;88 Suppl 2:21–24. doi:10.2106/JBJS.E.01273.

11. Davies NM, Reynolds JK, Undeberg MR, et al. Minimizing risks of NSAIDs: cardiovascular, gastrointestinal and renal. *Expert Rev Neurother.* 2006;6(11):1643–1655. doi:10.1586/14737175.6.11.1643.

12. Deyo RA, Von Korff M, Duhrkoop D. Opioids for low back pain. *BMJ*. 2015;350:g6380. doi:10.1136/bmj.g6380.

13. Mannion AF, Taimela S, Müntener M, et al. Active therapy for chronic low back pain. Part 1: effects on back muscle activation, fatigability, and strength. *Spine (Phila Pa 1976)*. 2001;26(8):897–908. doi:10.1097/00007632-200104150-00013.

14. Hayden JA, van Tulder MW, Malmivaara AV, et al. Exercise therapy for nonspecific low back pain: a meta-analysis. *Ann Intern Med*. 2005;142(9):765–775. doi:10.7326/0003-4819-142-9-200505030-00013.

15. Dansie EJ, Turk DC. Assessment of patients with chronic pain. *Br J Anaesth*. 2013;111(1):19–25. doi:10.1093/bja/aet124.

16. George SZ, Lentz TA, Goertz CM. Back and neck pain: in support of routine delivery of non-pharmacologic treatments as a way to improve individual and population health. *Transl Res.* 2021;234:129–140. doi:10.1016/j.trsl.2021.04.006.

17. Gibson J, Waddell G. Surgery for degenerative lumbar spondylosis. *Cochrane Database Syst Rev*. 2005;(4):CD001352. doi:10.1002/14651858.CD001352.pub2.

18. Chou R, Fu R, Carrino JA, et al. Imaging strategies for low-back pain: systematic review and meta-analysis. *Lancet*. 2009;373(9662):463–472. doi:10.1016/S0140-6736(09)60172-0.

19. Chang CJ, Chiu YP, Ji HR, et al. Surgical interventions for Bertolotti's syndrome: case report and review of unsatisfactory cases. *BMC Surg*. 2022;22(1):98. doi:10.1186/s12893-022-01498-y.

20. Qaseem A, Wilt TJ, McLean RM, et al. Noninvasive treatments for acute, subacute, and chronic low back pain: ACP guideline. *Ann Intern Med.* 2017;166(7):514–530. doi:10.7326/M16-2367.

21. Kamper SJ, Apeldoorn AT, Chiarotto A, et al. Multidisciplinary biopsychosocial rehabilitation for chronic low back pain. *BMJ*. 2015;350:h444. doi:10.1136/bmj.h444.

22. Manchikanti L, Kaye AD, Boswell MV, et al. Facet joint interventions in chronic spinal pain: systematic review. *Pain Physician*. 2015;18(4):E535–E582.

23. Chopra D, Stern E, Bushell WC, et al. Self-realization through Vedanta and yoga. *Front Pain Res (Lausanne)*. 2023;4:1075866. doi:10.3389/fpain.2023.1075866.

24. Swami Digambaraji. *Hatha Pradipika of Svatmarama*. 2nd ed. Lonavala: Kaivalyadhama; 1998.

25. Bhavanani AB. *Yoga chikitsa: application of yoga as a therapy*. Puducherry: Dhivyananda Creations; 2013.

26. Danesh H, Serban S, Herrera J. Yoga as an intervention for low back pain. *Top Pain Manag.* 2011;27(1):1–8. doi:10.1097/01.tpm.0000409966.37844.6d.

27. Nilachal P, Bhavanani AB, Ramanathan M, Mohanakrishnan J, Bhatt A, et al. Development of generic yoga therapy protocol for nonspecific chronic low back pain. *Yoga Mimamsa*. 2024;56(1):4–12. doi:10.4103/ym.ym_74_23.

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VER
Vascular & Endovascular Review

Integrating Ayurgenomics and Yoga Chikitsa in Non-Specific Chronic Low Back Pain: A Case Series on Functional Disability and Stress

Padmashanti Nilachal[1], Ananda Balayogi Bhavanani[2*], Meena Ramanathan[3], Vandana Srivastava[4] Rajarajan D[5]

[1]Ph.D Scholar, School of Yoga Therapy, Institute of Salutogenesis and Complementary Medicine, Sri Balaji Vidyapeeth (Deemed to be University), Pondicherry, India
[2*]Director, Institute of Salutogenesis and Complementary Medicine, Sri Balaji Vidyapeeth (Deemed to be University), Pondicherry, India
[3]Principal, School of Yoga Therapy, Institute of Salutogenesis and Complementary Medicine, Sri Balaji Vidyapeeth (Deemed to be University), Pondicherry, India
[4]HoD, Department of Ayurveda and Holistic Health, Dev Sanskriti Vishwavidyalaya Gayatrikunj-Shantikunj, Haridwar (Uttarakhand), India
[5]Associate Professor, M.S Orthopaedics, MGMC & RI Hospital , Sri Balaji Vidyapeeth (Deemed to be University), Pondicherry, India

*Corresponding Author: Dr. Ananda Balayogi Bhavanani (yognat@gmail.com), Director, Institute of Salutogenesis and Complementary Medicine, Sri Balaji Vidyapeeth (Deemed to be University), Pondicherry, India

ABSTRACT

Background: Non-specific chronic low back pain is a multifactorial condition shaped by biomechanical, psychological, and constitutional factors. Ayurgenomics, which integrates Ayurvedic prakriti classification with physiological profiling, may explain inter-individual variability in treatment response. Recently, a standardized Generic Yoga Therapy Protocol comprising 18 validated techniques has been developed for NCLBP through expert consensus.

Objective: To explore how individuals with different prakriti types respond to a uniform 6-week Yoga Therapy protocol using standardized Ayurgenomic profiling via AyuSoft.

Methods: Six adults with clinically diagnosed NCLBP and varied prakriti types were selected to reflect constitution-based diversity. Each underwent prakriti assessment using AyuSoft developed by Centre for Development of Advanced Computing (C-DAC) and was classified into pradhāna–anubandha types. All participants completed a 6-week, 40-minute validated Yoga Therapy protocol. Outcomes were measured pre- and post-intervention using the Visual Analogue Scale (VAS), Oswestry Disability Index (ODI), and Perceived Stress Scale (PSS).

Results: All participants demonstrated clinically meaningful improvement in functional disability. Response patterns differed by prakriti:

Kapha-pradhāna individuals showed consistent improvements across physical and psychological domains.

Pitta-pradhāna individuals showed rapid pain relief but varied emotional recovery.

Vāta-pradhāna participants exhibited notable stress reduction with limited pain change.

Conclusion: The standardized 40-minute Yoga Therapy protocol yielded functional and psychological benefits across all six NCLBP cases. Observed variability in therapeutic response aligned systematically with Ayurgenomic profiles, supporting prakriti-based personalization in yoga-based rehabilitation.

KEYWORDS: Ayurgenomics, Prakriti, Yoga Chikitsa, Yoga Therapy, Chronic Low Back Pain, AyuSoft, Personalized Rehabilitation.

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INTRODUCTION

Non-specific chronic low back pain represents a primary contributor to global disability, encompassing not only musculoskeletal impairments but also elements of stress physiology, emotional reactivity, and lifestyle influences [1,2]. Conventional interventions, such as physical therapy, pharmacotherapy, and ergonomic adjustments, frequently yield suboptimal outcomes owing to the multifaceted etiology of NCLBP. [3,4]

Gmail Nilachal Padmashanti <nilachal.padmashanti@gmail.com>

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Review Article

Effect of Different Yoga Therapy Styles on Nonspecific Chronic Low Back Pain: A Narrative Review

Abstract

Nonspecific chronic low back pain (NCLBP) is a prevalent and disabling condition for which conventional medical treatments, such as medication, physical therapy, and surgery, often provide limited long-term relief. This narrative review examines the potential of various yoga therapy modalities, including general Hatha Yoga, Iyengar Yoga, Viniyoga, an integrated approach to yoga therapy, and nonspecified medical yoga in the management of NCLBP, emphasizing yoga therapy's supportive role. Synthesizing findings from 29 studies, the review offers preliminary insights into how different yoga therapy styles may contribute to the management of NCLBP. The available evidence suggests that yoga interventions are generally safe and may provide varying degrees of benefit, although the strength of these observations differs across styles and study designs. Iyengar Yoga appears to show comparatively stronger trends for pain reduction and functional improvement, while the integrated approach to yoga therapy (IAYT) may offer broader short-term psychosocial and flexibility-related advantages in structured settings. Viniyoga and Hatha Yoga demonstrate moderate improvements that are comparable to conventional therapeutic exercises. Nonspecified yoga protocols indicate potential utility but remain inconsistently defined. These observations highlight plausible biomechanical, neurological, and psychosocial pathways through which yoga could exert therapeutic effects. Thus, yoga therapy emerges as a promising, low-risk complementary option that warrants further standardized, long-term comparative research to clarify efficacy and clinical applicability.

Keywords: *Chronic low back pain, Hatha Yoga, integrative approach to yoga therapy, Iyengar Yoga, yoga therapy*

Padmashanti Nilachal, Ananda Balayogi Bhavanani[1]

School of Yoga Therapy (SYT), Institute of Salutogenesis and Complementary Medicine (ISCM), [1]Institute of Salutogenesis and Complementary Medicine (ISCM), Sri Balaji Vidyapeeth (Deemed to be University), Puducherry, India

Address for correspondence:
Prof. Ananda Balayogi Bhavanani,
1st Floor, I-Block, ISCM, Mahatma Gandhi Medical College, Sri Balaji Vidyapeeth (Deemed to be University), Puducherry, India.
E-mail: yognat@gmail.com

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Introduction

This manuscript is a narrative review synthesizing previously published studies and doesn't involve original data collection, participant recruitment, imaging procedures, or any clinical experimentation.

Burden of nonspecific chronic low back pain

Chronic low back pain (CLBP) is a significant public health issue, affecting a large proportion of the population.[1] CLBP is a widespread and serious occupational health concern that poses major professional, economic, and societal challenges.[1] Studies have shown that the prevalence of CLBP can range from 12% to 33% in various populations.[2] In the Indian context, the prevalence of low back pain has been reported to range from 6.2% to 92%, highlighting the substantial burden of this condition in the country.[3-6]

The economic and healthcare impacts of CLBP are significant. It is a leading cause of disability worldwide, leading to reduced productivity, absenteeism from work, and increased healthcare costs.[7,8] The direct and indirect costs associated with CLBP place a substantial burden on both individuals and the healthcare system.[9] These costs include lost wages, decreased quality of life (QoL), and significant strain on healthcare resources due to the need for ongoing treatment and management.[7,10]

Current treatments and limitations

Medications such as nonsteroidal anti-inflammatory drugs and opioid analgesics can provide short-term pain relief, but they are associated with a high risk of adverse effects, including gastrointestinal bleeding, addiction, and overdose.[11] In addition, the long-term use of these medications has been linked to an increased risk of chronicity and recurrence of NCLBP.[12]

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